

REMARKS

Applicants have cancelled claim 3, and claim 20 has been withdrawn from consideration by the examiner, leaving claims 1-2, 4-19 and 21 extant in the present case.

The amendment to claim 16 brings this claim within the requirements of 35 USC §112, second paragraph, and applicants respectfully request that the rejection of this claim be withdrawn. Support for the Markush groupings introduced into the present claims can be found on page 3:30-36 of the present specification, and the temperature requirement of 40°C is found on that same page, at lines 21-24.

Claims 1-2, 4-19 and 21 stand rejected under 35 USC §103(a) as unpatentable over Van Ooijen et al. (GB 0608975) or Gonthier et al. (US 3,600,198) or Kotani et al. (US 4,122,187), for reasons of record cited in the office action of March 1, 2001. Applicants respectfully request reconsideration of this rejection, and assert that the references neither read on nor suggest the present invention as defined by the amended claims.

Van Ooijen discloses compositions comprising an alkali(ne earth) carboxylate of a hydroxycarboxylic acid (lactic acid and gluconic acid being preferred) mixed with an aliphatic carboxylic acid having a lower pKa than the hydroxycarboxylate salt (p.2:16-25,33-36,47-54). The present claims, as amended, retain both liquid aliphatic carboxylic acids and liquid hydroxycarboxylic acids, but they do not include the salts of hydroxycarboxylic acids as components in the claimed compounds. As van Ooijen

requires salts of hydroxycarboxylic acids, the presently claimed invention is not suggested by this reference. Applicants respectfully request that the rejection be withdrawn with respect to the disclosure of van Ooijen.

Gonthier discloses a preservative composed of propionic acid and benzoic acid mixtures buffered with their respective salts and then combined (col.1:14-18). The reference requires that all four compounds - propionic acid, a propionate salt, benzoic acid and a benzoate salt - be present for effectiveness (see col.3-4:ex.1-5). Limiting the C₁₋₈ mono- or di- carboxylic acid salts in the present invention to those specifically enumerated excludes benzoate completely from the present invention. As Gonthier requires the presence of benzoate in some form, the present amendments, therefore, remove Gonthier as a §103(a) reference.

Kotani discloses mixtures of sorbic acid with salts of sorbic acid, succinic acid, citric acid, tartaric acid, proprionic acid, acetic acid and inorganic salts. Limiting the C₁₋₈ mono- or di- carboxylic acids to those specifically enumerated excludes the possibility of using sorbic acid, as does removing sorbic acid from the enumerated additives of claim 19. Since sorbic acid is essential in Kotani, applicants submit that this amendment removes the reference as a basis for rejection under §103(a).

Additionally, van Ooijen does teach that the hydroxycarboxylate salt may be admixed or impregnated with 1 to 90% w/w, preferably 40-60% w/w of the aliphatic carboxylic acid based on the total weight of the alkali(ne earth) metal salt of the hydroxycarboxylic acid. The present invention describes mono- and/or dicarboxylic

acids and the salts of these acids which can be advantageously used to produce the inventive impregnated salts (specification, p.3:26-30). As can be seen from the specification, concentrations above 30% by weight of the acids are less preferred for economic reasons (p.4:35), because the product sticks together and cannot easily be used (p.4:22-35).

The composition disclosed by van Ooijen has a highly pungent odor and a low concentration of the active ingredient (40-60% w/w carboxylic acid). The presently claimed impregnated salts have a high concentration of the carboxylic acid (68-75% by weight; see p.3:11-19). In addition, the highly pungent odor of the acid is reduced (see p.3:11-12). These beneficial results are unexpected in light of the similarities in the carboxylic acid salts, and the preference in van Ooijen for hydroxycarboxylic acid salts that are not included in the presently claimed invention.

Applicants respectfully submit that the disclosures in the above-named references do not given one of ordinary skill in the art sufficient motivation or possibility for success in producing the presently claimed invention. Accordingly, applicants respectfully request that the examiner withdraw the rejection of claims 1-2, 4-19 and 21 under 35 USC §103(a).

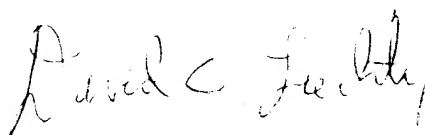
In view of the foregoing amendments and remarks, applicants consider that the rejections of record have been obviated and respectfully solicit passage of the application to issue.

Please charge any shortage in fees due in connection with the filing of this

BROECKEL et al. - Ser. No. 09/487,000

paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,
KEIL & WEINKAUF

A handwritten signature in cursive script, appearing to read "David C. Liechty".

David C. Liechty
Reg. No. 48,692

1101 Connecticut Ave., N.W.
Washington, D.C. 20036
(202)659-0100

DCL/

VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE CLAIMS

Please cancel claim 3.

Please amend claims 1, 2, 5, 12, 14, 16 and 19 to read as follows:

1. Impregnated salts comprising at least one salt of one or more carboxylic acids, selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, oxo acids and mineral acids, which salt has been impregnated with from 0.5 to 30% by weight, based on the carboxylic acid salt, of at least one [liquid] carboxylic acid that is liquid or becomes liquid at a temperature of 40°C or below, also selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, hydroxy carboxylic acids, oxo acids and mineral acids.
2. Impregnated salts as claimed in claim 1, comprising at least one salt of a carboxylic [C₁-C₈-mono- or dicarboxylic] acid selected from the group consisting of formic acid, acetic acid and propionic acid, which salt has been impregnated with at least one carboxylic [C₁-C₈-mono- or dicarboxylic] acid, also selected from the group consisting of formic acid, acetic acid and propionic acid.
5. Impregnated salts as claimed in claim 1, wherein the impregnated salts comprise at least one salt [of one or more carboxylic acids] selected from the group of ammonium, potassium, sodium, lithium, magnesium or calcium salts.

12. A process for producing impregnated salts as claimed in claim 1, which comprises impregnating at least one salt of a carboxylic acid or of a mixture of carboxylic acids selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, oxo acids and mineral acids, with at least one [liquid] carboxylic acid that is liquid or becomes liquid at a temperature of 40 °C or below and is also selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, hydroxy carboxylic acids, oxo acids and mineral acids, until the concentration is 30% by weight based on the carboxylic acid salt.

14. A process for producing a preservative [as claimed in claim 6], which comprises mixing impregnated salts as claimed in claim 1 with one or more carriers and/or formulation auxiliaries, and agglomerating with or without the addition of at least one binder.

16. A process for preserving human and animal food [or silage], wherein the impregnated salts as claimed in claim 1, or the preservatives are added to the human or animal food [or silage].

19. A preservative as claimed in claim 18, wherein the protective agent is selected from the group consisting of citric acid, fumaric acid, succinic acid, adipic acid, benzoic

BROECKEL et al. - Ser. No. 09/487,000

acid[, sorbic acid] and their salts.

COPY OF ALL CLAIMS

1. Impregnated salts comprising at least one salt of one or more carboxylic acids, selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, oxo acids and mineral acids, which salt has been impregnated with from 0.5 to 30% by weight, based on the carboxylic acid salt, of at least one carboxylic acid that is liquid or becomes liquid at a temperature of 40°C or below, also selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, hydroxy carboxylic acids, oxo acids and mineral acids.
2. Impregnated salts as claimed in claim 1, comprising at least one salt of a carboxylic acid selected from the group consisting of formic acid, acetic acid and propionic acid, which salt has been impregnated with at least one carboxylic acid, also selected from the group consisting of formic acid, acetic acid and propionic acid.
4. Impregnated salts as claimed in claim 1, where the carboxylic acids in the carboxylic acid salts and the carboxylic acid used for impregnating the salts are identical.
5. Impregnated salts as claimed in claim 1, wherein the impregnated salts comprise at least one salt selected from the group of ammonium, potassium, sodium, lithium, magnesium or calcium salts.

6. A preservative comprising an impregnated salt as claimed in claim 1.
7. A preservative as claimed in claim 6, additionally comprising a carrier.
8. A preservative as claimed in claim 6, which is coated with a protective agent which is soluble or swellable in water at 20°C.
9. A preservative as claimed in claim 6, wherein water-soluble polymers, organic acids, their salts or low-melting inorganic salts are used as protective agents.
10. A preservative as claimed in claim 6, further comprising a protective agent selected from the group consisting of polyethylene glycols, polyvinylpyrrolidones or C₃-C₁₄ organic acids and their salts, and amino acids and their salts.
11. A preservative as claimed in claim 6, wherein a dusting powder is applied to the surface in addition to or in place of the protective agent.
12. A process for producing impregnated salts as claimed in claim 1, which comprises impregnating at least one salt of a carboxylic acid or of a mixture of carboxylic acids selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, oxo acids and mineral acids, with at least one carboxylic

acid that is liquid or becomes liquid at a temperature of 40 °C or below and is also selected from the group consisting of formic acid, acetic acid, propionic acid, amino acids, hydroxy carboxylic acids, oxo acids and mineral acids, until the concentration is 30% by weight based on the carboxylic acid salt.

13. A process as claimed in claim 12, wherein at least one carboxylic acid is introduced into a mixer, and at least one salt of a carboxylic acid or of a mixture of carboxylic acids is metered in.

14. A process for producing a preservative, which comprises mixing impregnated salts as claimed in claim 1 with one or more carriers and/or formulation auxiliaries, and agglomerating with or without the addition of at least one binder.

15. A process as claimed in claim 14, wherein the preservative is coated with a protective agent which is soluble or swellable in water at 20°C and/or if required the flow characteristics of the preservative are ensured by dusting with a finely dispersed dusting powder.

16. A process for preserving human and animal food, wherein the impregnated salts as claimed in claim 1, or the preservatives are added to the human or animal food.

17. A preservative as claimed in claim 6, additionally comprising formulation auxiliaries.

18. A preservative as claimed in claim 10, wherein the protective agent is selected from the group consisting of C₃-C₆ organic acids and their salts.

19. A preservative as claimed in claim 18, wherein the protective agent is selected from the group consisting of citric acid, fumaric acid, succinic acid, adipic acid, benzoic acid and their salts.

21. A process for acid treatment wherein the impregnated salts of claim 1 or the preservatives are introduced into or placed on an item to be treated.